



Is your patient (man or woman) over 50?*

Think Osteoporosis

No history of minimal trauma fracture

Investigate risk of osteoporosis

One or more risk factors?	MBS item no.
Minimal trauma fracture	12306
Recurrent falls	No rebate
Family history (parent or sibling)	No rebate
Early menopause (<45) or hypogonadism	12312
>3months glucocorticoid use (> or = 7.5mg/day)	12312
Coeliac disease/other malabsorption disorders	12315
Inflammatory arthritis	12315
Primary hyperparathyroidism	12315
Hyperthyroidism	12315
Chronic liver or kidney disease	12315
Over 70 years of age	12323
Breast cancer treated with aromatase inhibitors	No rebate
Prostate cancer on androgen deprivation therapy	No rebate
Anti-epileptic medications	No rebate
Low body weight	No rebate
Organ or bone marrow transplant	No rebate
HIV and treatment	No rebate
Major depression, especially treated with SSRIs	No rebate
Type 1 and 2 Diabetes mellitus	No rebate
Multiple myeloma or monoclonal gammopathies	No rebate

Do BMD test (DXA)

T-score -1.0 to -2.5

Osteopenia

Ensure

- Calcium 1300mg/day
- Vitamin D >50nmol/L
- Weight bearing exercise
- Falls prevention

See over for further details

Repeat BMD test
in 2-5 years
depending on severity

T-score ≤ -2.5

Osteoporosis

Treat when risk factors are present to prevent first fracture

Possible exceptions: modifiable risk factors only, women under 55 or men under 60, as these are associated with lower absolute fracture risk.

Currently, not all patients requiring treatment to prevent first fracture are eligible for PBS re-imburement. Available on the PBS for men and women aged 70 and over:

- Alendronate (T-score ≤ -2.5)
- Risedronate (T-score ≤ -2.5)
- Denosumab (T-score ≤ -2.5)
- Zoledronic acid (T-score ≤ -3.0)

For women under 60 with menopausal symptoms: ● HRT

Adequate calcium, vitamin D and exercise are important

Repeat BMD test in 2 years
One year in some circumstances

Minimal trauma fracture – past or present

Possible vertebral fracture?

- Height loss
- Back pain
- Kyphosis: Spinal x-ray to confirm

BMD test recommended (MBS 12306)

Established osteoporosis

Treat for secondary fracture prevention

Available on the PBS for men and women of any age with a minimal trauma fracture:

- Alendronate
- Risedronate
- Zoledronic acid
- Denosumab
- Strontium ranelate

Available on the PBS for post-menopausal women with a minimal trauma fracture:

- Raloxifene

Available on the PBS for men and women with a very high risk of fracture (T-score ≤ -3.0, two or more minimal trauma fractures and at least one new fracture after 12 months on anti-resorptive therapy):

- Teriparatide

Repeat BMD test in 2 years
One year in some circumstances

Special circumstances for treatment

People on oral or inhaled corticosteroids (7.5mg per day prednisolone or equivalent for at least 3 months) and T-score of -1.5 or less should have preventive drug therapy.

Women treated with aromatase inhibitors for breast cancer and men on anti-androgen therapy should have preventive osteoporosis drug therapy, dependent on their absolute risk of fracture.

Is your patient (man or woman) over 50? Think Osteoporosis

Calcium Over 50% of Australians do not get enough calcium

Recommended daily dietary calcium intakes (RDI):

Adults	1000mg
Women over 50	1300mg
Men over 70	1300mg
People with osteoporosis	1300mg

Calcium content of key foods (per standard serve)

Milk and yogurt (including low fat versions)	304-488mg
Cheese	121-209mg
Tinned fish	175-486mg
Selected green vegetables	12-91mg
Tofu (firm)	150-850mg
Selected nuts and tahini	30-66mg
Dried fruit	32-160mg
Fortified milk	520mg
Soy milk (including low fat versions)	309-367mg

Recommend foods rich in calcium. Aim for 3 serves of dairy per day.

Calcium supplementation

- 500-600mg per day
- Combine with a vitamin D supplement if necessary

Recommended for people who are:

- Unable to get adequate calcium from their diet
- Taking osteoporosis medications
- Taking corticosteroids (>3 months)
- Elderly and housebound or in residential care (combine with vitamin D)

Vitamin D Deficiency is associated with low bone density and increased risk of falls

Vitamin D levels should be at least 50nmol/L at the end of winter (10-20nmol/L higher in summer)

Groups at risk of vitamin D deficiency (test late winter/early spring):

- People in residential care or housebound, particularly the elderly
- Disabled, chronically ill or obese people
- Indoor workers
- Darker skinned people
- People who cover their skin for cultural or religious reasons
- People with medical conditions or taking medications that interfere with vitamin D metabolism

Vitamin D status and recommended supplement:

Serum 25-OHD (nmol/L)		Recommended supplement
>50	Adequate	Not required
30-49	Mild deficiency	1000-2000IU/day
12.5-29	Moderate deficiency	3000-5000IU/day for 6-12 weeks, followed by maintenance dose of 1000-2000 IU/day
<12.5	Severe deficiency	1000-2000 IU/day

Sunshine requirements for adequate vitamin D:

- Summer: 6-7 minutes on average mid-morning or mid-afternoon (fair skin)
- Winter: Up to 30 minutes at noon, depending on latitude (fair skin)
- Darker skin requires 3-6 times longer exposure

When sun exposure is inadequate, prevent deficiency with supplements:

Group	Recommended supplement
People under 70	At least 600IU/day
People over 70	At least 800IU/day
Sun avoiders	1000-2000IU/day

Window glass, sunscreens and covering clothing inhibit vitamin D synthesis.

Exercise Weight bearing PLUS resistance

At least 30 minutes, 3-5 times/week

Weight bearing:	Resistance:	Exercise should be:
<ul style="list-style-type: none"> • Running • Impact aerobics • Jump rope • Dancing • Basketball • Netball • Tennis • Stair climbing 	<ul style="list-style-type: none"> • Hand weights • Ankle weights • Gym equipment 	<ul style="list-style-type: none"> • High impact • Regular • Intense • Progressive • Varied

Non-weight bearing exercise (swimming, cycling) and leisure walking does not improve bone density.

Falls prevention 90% of hip fractures result from a fall

Risk factors	Intervention
Muscle weakness, gait, poor balance	Low risk: Tai Chi Mod risk: Targeted exercise Over 80: Individual home exercise (physiotherapist)
Feet and footwear	Foot orthoses, footwear advice, home-based foot and ankle exercises (podiatrist).
Syncope/dizziness	Cardiac pacing if appropriate.
Medications	Review. Give calcium/vitamin D supplements.
Vision	Review spectacle requirements. Cataract surgery if needed in older people.
Environment	Home hazard assessment (occ. therapist) Handrails, lights, trip hazards. Walking aids.